



U.S. Department
of Transportation

Pipeline and
Hazardous Materials
Safety Administration

COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE FISSILE
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/0585/AF-96, REVISION 2

East Building, PHH-23
1200 New Jersey Avenue SE
Washington, D.C. 20590

REVALIDATION OF JAPANESE COMPETENT AUTHORITY
CERTIFICATE J/159/AF-96

This certifies that the radioactive material package design described is hereby approved for use within the United States for import and export shipments only. Shipments must be made in accordance with the applicable regulations of the International Atomic Energy Agency¹ and the United States of America².

1. Package Identification - MST-30.
2. Package Description and Authorized Radioactive Contents - as described in Japan Certificate of Competent Authority J/159/AF-96, signed August 20, 2007 (attached).
3. Criticality - The minimum criticality safety index is 5.0. The maximum number of packages per conveyance is determined in accordance with Table X of the IAEA regulations cited in this certificate.
4. General Conditions -
 - a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.
 - b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Hazardous Materials Technology, (PHH-23), Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington D.C. 20590-0001.
 - c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

¹ "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100-199, United States of America.

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- d. Records of Quality Assurance activities required by Paragraph 310 of the IAEA regulations¹ shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.
5. Special Conditions -
- a. Cylinders used under this certificate must have been designed and manufactured in compliance with the ANSI N14.1 standard in effect at the time of manufacture.
- b. Cylinders used under this certificate must be operated, maintained and handled in accordance with the ANSI N14.1 standard in effect at the time of shipment.
6. Marking and Labeling - The package shall bear the marking USA/0585/AF-96 in addition to other required markings and labeling.
7. Expiration Date - This certificate expires on December 12, 2012. On March 03, 2008, this certificate supersedes all previous revisions of USA/0585/AF-96.

This certificate is issued in accordance with paragraph 814 of the IAEA Regulations and Section 173.472 and 173.473 of Title 49 of the Code of Federal Regulations, in response to the September 25, 2007 petition by Transport Logistics International, Burtonsville, MD, and in consideration of other information on file in this Office.

Certified By:



Robert A. Richard
Deputy Associate Administrator for Hazardous Materials Safety

Nov 30 2007
(DATE)

Revision 2 - Issed to endorse Japanese Certificate of Approval No. J/159/AF-96, signed August 20, 2007, and to extend the expiration date.

IDENTIFICATION MARK

J/159/AF-96

COMPETENT AUTHORITY
OF
JAPAN

CERTIFICATE FOR APPROVAL OF
PACKAGE DESIGN
FOR THE TRANSPORT OF
RADIOACTIVE MATERIALS

ISSUED BY

MINISTRY OF ECONOMY, TRADE AND INDUSTRY
1-3-1, KASUMIGASEKI, CHIYODA-KU,
TOKYO, JAPAN

CERTIFICATE OF APPROVAL OF PACKAGE DESIGN
FOR THE TRANSPORT OF RADIOACTIVE MATERIAL

This is to certify, in response to the application by MITSUBISHI NUCLEAR FUEL CO., LTD., that the package design described herein complies with the design requirements for a package containing fissile uranium hexafluoride, specified in the 2005 Edition of the Regulations for the Safe Transport of Radioactive Materials (International Atomic Energy Agency, Safety Standards Series No.TS-R-1) and the Japanese rules based on the Law for Regulation of Nuclear Source Materials, Nuclear Fuel Materials and Reactors.

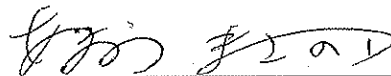
This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported.

COMPETENT AUTHORITY

IDENTIFICATION MARK : J/159/AF-96

Aug. 20, 2007

Date



Masanori Amano

Director

Nuclear Fuel Transport and Storage

Regulation Division

Nuclear and Industrial Safety Agency

Ministry of Economy, Trade and Industry

Competent Authority of Japan

for Package Design Approval

1. The Competent Authority Identification Mark : J/159/AF-96
2. Name of Package : MST-30
3. Type of Package : Type A, Fissile Material and Uranium Hexafluoride Package
4. Specification of Package
 - (1) Material of Packaging : See the attached Table-1
 - (2) Total Weight of Packaging : 1,893 kg or less
 - (3) Outer Dimensions of Packaging :
 - (i) Length : Approximately 2.4 m
 - (ii) Width : Approximately 1.3 m
 - (iii) Height : Approximately 1.4 m
 - (4) Total Weight of Package : 4,170 kg or less
 - (5) Illustration of Package : See the attached Figure-1 (Bird's-eye view)
5. Specification of Radioactive Contents : See the attached Table-2
6. Description of Containment System

Containment system consists of 30B cylinder, valve and plug.
Teflon rubber is used for valve gaskets.
7. For Package containing Fissile Materials,
 - (1) Restrictions on Package
 - (i) Restriction Number "N" : No restriction
 - (ii) Array of Package : No restriction
 - (iii) Criticality Safety Index (CSI) : 0
 - (2) Description of Confinement System

Confinement system consists of a mass of uranium hexafluoride and 30B cylinder.
 - (3) Assumptions of Leakage of Water into Package

No water will leak into or out of any void spaces of 30B cylinder not only during routine transport but also under normal and accident conditions even if the protective overpack is fractured and deformed.
 - (4) Special Features in Criticality Assessment

Quality control of 30B cylinder including its valve and plug should be performed so as to prevent any leakage of water thereinto.
8. Assumed Ambient Conditions
 - (1) Ambient Temperature Range : 38°C
 - (2) Insolation Data : Table XI of IAEA Regulation

9. Handling, Inspection and Maintenance

(1) Handling Instructions

- (i) Package should be handled carefully in accordance with the schedule and procedures established properly taking all possible safety measures.
- (ii) package should be handled using appropriate lifting devices such as forklift or crane.
- (iii) When packaging is stored outdoors, it should be covered with an appropriate waterproof sheet, avoiding the situation where it is placed directly on the ground.

(2) Inspections and Maintenance of Packaging

The following inspection should be performed not less than once a year (once for every ten times in a case where the packaging is used not less than ten times a year) and defect of packaging should be repaired, if any, in order to maintain the integrity of defect of packaging should be repaired, if any, in order to maintain the integrity of packaging.

- (i) Visual inspection for protective overpack
- (ii) Visual and Subcriticality inspection for 30B Cylinder
- (iii) Hydrostatic test, Leaktightness test and Wall thickness inspection according to ANSI N14.1

(3) Action prior to Shipment

The following inspections should be performed prior to shipment.

- | | |
|--|---------------------------|
| (i) Visual Inspection | (ii) Contents Inspection |
| (iii) Surface Contamination Inspection | (iv) Dose Rate Inspection |
| (v) Subcriticality Inspection | (vi) Weight Inspection |
| (vii) Lifting Inspection | |

(4) Precautions for Loading of Package for Shipment

Package should be securely loaded to the conveyance at the designated tie-down portion of the packaging so as not to move, roll down or fall down from the loading position during transport.

10. Expiry Date

Expiry Date : December 12, 2012

11. Note

- (1) It is required by Japanese regulations to acquire Confirmation of Package for each shipment. Licensees could get Approval of Packaging for individual packaging beforehand.
- (2) This certificate is issued to extend the expiration date of previous certificate.

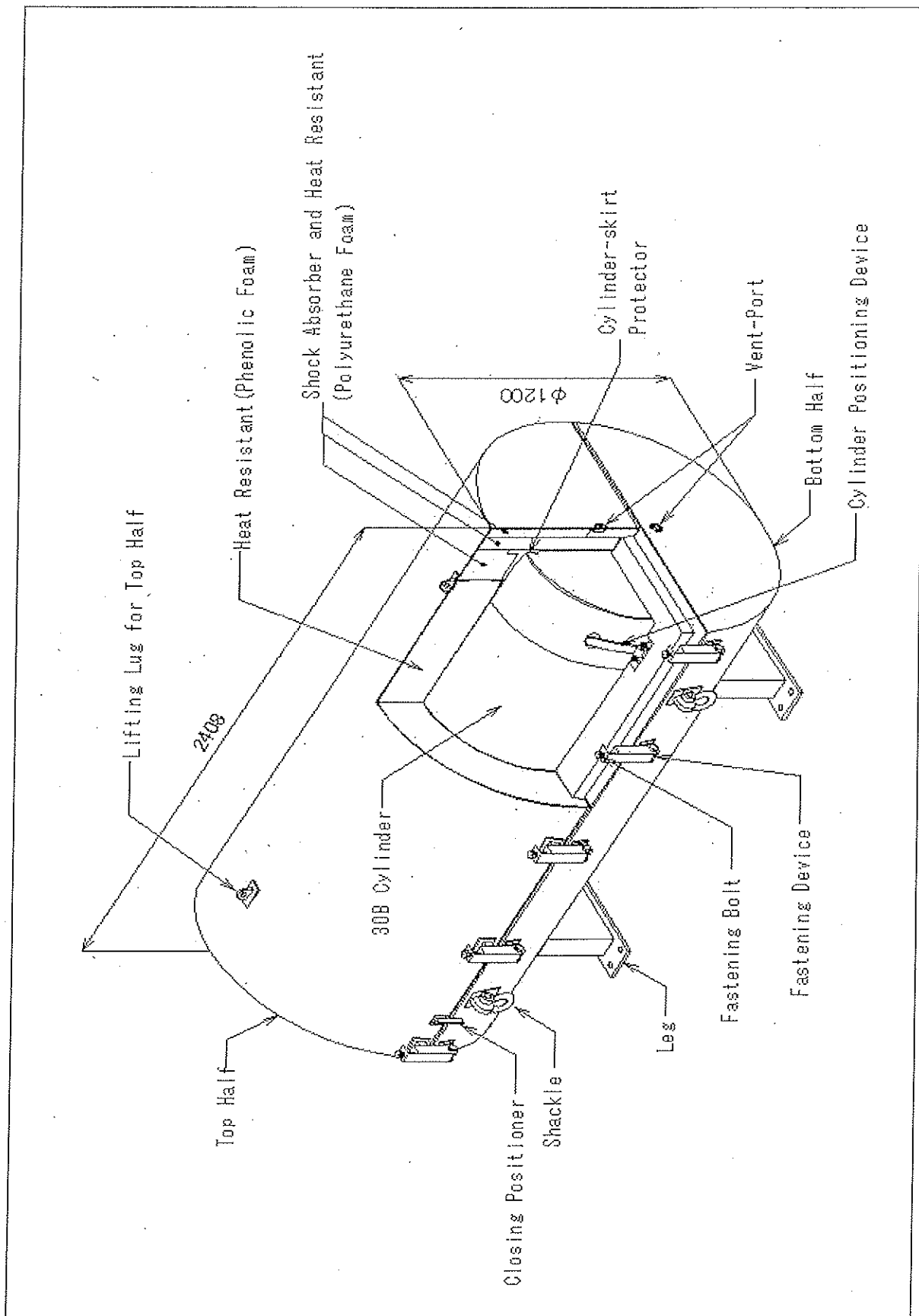


Figure-1 MST-30 Type Transport Package External Appearance

Table-1 Material of Packaging

Construction		Material
Protective Packaging	External Shell	Stainless Steel(SUS304)
	Internal Shell	
	Heat Insulator	Phenolic Foam
	Support	Urethane Foam
	Pad	Sponge Rubber and Neoprene
Cylinder	Shell	Pressure Vessel Plates, Carbon Steel, for Moderate-and Lower-Temperature Service (ASTM A516)
	Heads	
	Skirt	Pressure Vessel Plates, Carbon Steel, for Moderate-and Lower-Temperature Service (ASTM A516) or Structural Steel (ASTM A36)
	Valve	Aluminum Bronze (Alloy 636)
	Plug	Aluminum Bronze (ASTM B150)

Table-2 Specification of Content

Material of Nuclear Fuel	Uranium Hexafluoride (UF ₆)	
Physical State	Solid (Block and Powder)	
Total Weight of Nuclear Fuel	2,277 kg -UF ₆ or less	
Total Activity	245 GBq or less	
Initial Enrichment	5% or less	
Total Heat Generation Rate	Not Applicable	
Burn Up Rate		
Cooling Time		
Moderation Control, i.e. H/U Atomic Ratio	Less than 0.088 (As Purity of UF ₆ is more than or equivalent to 99.5 %)	
Radio-nuclides	²³² U	$\leq 2 \times 10^{-9}$ g/g ²³⁵ U
	²³⁴ U	$\leq 1 \times 10^{-2}$ g/g ²³⁵ U
	²³⁶ U	$\leq 5 \times 10^{-3}$ g/g ²³⁵ U
	⁹⁹ Tc	$\leq 2 \times 10^{-7}$ g/g ²³⁵ U



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ORIGINAL REGISTRANT(S):

Mr. Darren Condrey
Transport Logistics International
Transport Logistics International
4000 Blackburn Lane
Suite 250
Burtonsville, 20866
USA

Mr. Mark Lambert
Transport Logistics International
Transport Logistics International
4000 Blackburn Lane
Suite 250
Burtonsville, 20866
USA

REGISTERED USER(S):

Mr. Yutaka Ikada
Mitsubishi Nuclear Fuels Company
622-1 Funaisikawa
Tokai-mura
Naka-gun, Ibaraki 319-1197
Japan